

# **Navajo Abandoned Uranium Mine**

## **Site Screen Report**

*This form is for use at the site of abandoned uranium mines (AUM) located on Navajo Nation lands. Applicable sites include all mine and mine features that have or have not undergone reclamation by the Navajo Abandoned Mine Lands Reclamation Program, including features, adits, pits and waste piles. Applicable sites also include all AUM sites listed in the USEPA CERCLIS database, all sites listed in the 2008 AUM GIS Report issued by USACOE and USEPA, all AUM sites on allotment lands associated with the Navajo Nation, and any and all AUM sites not listed in any database located on Navajo lands. Reconnaissance of any sites located on lands adjacent to Navajo lands that may be impacting Navajo lands will need to be coordinated with the authorities appropriate to those lands.*

*The purpose of the form is to ascertain the status and location of the identified AUM site, and record all immediate site information associated with the mine site. Decisions and recommendations on what additional steps are needed will be provided on a separate document.*

### **Julius Chee No. 2 AUM Site**

#### **Navajo AUM Western Region**

**Prepared by:**

**Weston Solutions, Inc.**

**Contract: W91238-06-F-0083**

**12767.063.599.1111**

**January 2011**

**Part I Site Identification, Location and Status****Site Names and ID numbers as applicable****Mine ID:** 158; 1041**Map ID:** *158:* W117; *1041:* W112**CERCLIS:** NNN000909085**Navajo Abandoned Mine Land Reclamation Program:** *158:* NA-0195; *1041:* NA-0194**Local name / Aliases:** Julius Chee #2**Chapter and local area:** Coalmine Mesa Chapter**County:** Coconino **State:** Arizona**Lat/Long:** *158:* 35.6488331268 N / -111.298930903 W  
*1041:* 35.6517500976 N / -111.30068237 W**Nearby road and highway:** Indian Route 6730 **Local Post Office:** Cameron, AZ**Surface Land Status: check one or more and provide ownership and contact information below**

<b>Tribal Trust Land</b>	<input checked="" type="checkbox"/>	<b>Public lands</b>	<input type="checkbox"/>
<b>Private</b>	<input type="checkbox"/>	<b>Tribal Fee Land</b>	<input type="checkbox"/>
<b>Bureau of Land Mgmt</b>	<input type="checkbox"/>	<b>Allotment</b>	<input type="checkbox"/>
<b>State</b>	<input type="checkbox"/>	<b>Fee land</b>	<input type="checkbox"/>

**Subsurface Mineral Rights:**

No information on subsurface mineral rights ownership was found in the EPA/AUM Database.

**Claim and operator information:**

The Julius Chee No. 4 mine claim consists of 2 separate mine sites (#'s 158, 1041). The mine claim surface land status is classified as Tribal Trust Land. Historical documents showed the operator of the mine as B.C. Associates in 1956, and the Utco Uranium Corporation from 1957 to 1958. No additional ownership / lease information was identified in the EPA/AUM database.

**Number of residential structures within 200 feet of mine:** None**Estimated volume of mine waste onsite:** None

## Part II Summary of radiological readings

**Mine ID:** 158

### Highest gamma radiation measurement:

101,997 counts per minute (cpm)

### Describe any other radiological measurements:

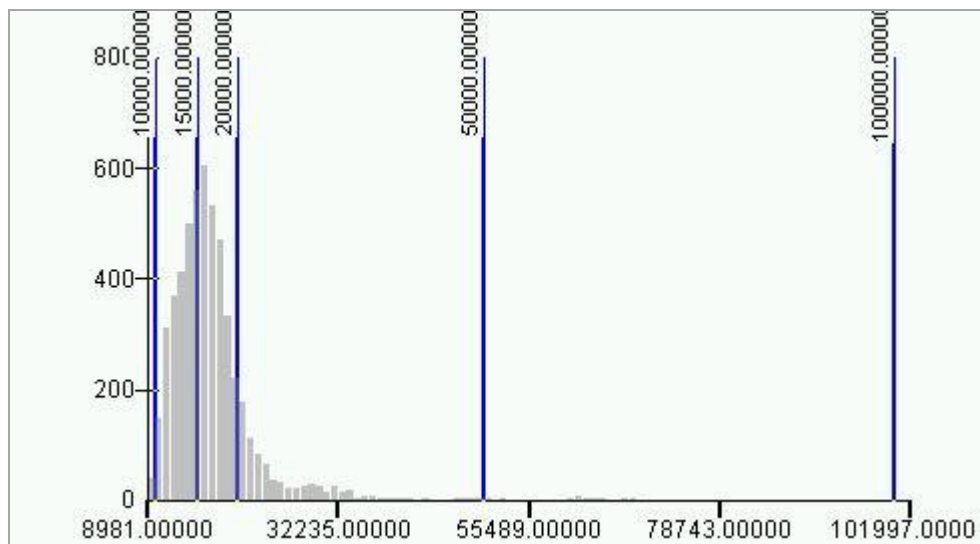
A total of 5,278 gamma radiation measurements were collected from the mine site, ranging from 8,981 cpm to 101,997 cpm. The measurements are represented in Figures 1 and 2.

**Background Readings:** 20,518 cpm; 9,513 cpm

**Background Average:** 15,016 cpm (mine claim background average was 12,328 cpm)

### Distribution Chart and Statistics:

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	5278
Minimum:	8981.00000
Maximum:	101997.00000
Sum:	89588970.00000
Mean:	16974.03751
Median:	15983.00000
Standard Deviation:	6307.36200

**Mine ID:** 1041

**Highest gamma radiation measurement:**

19,938 counts per minute (cpm)

**Describe any other radiological measurements:**

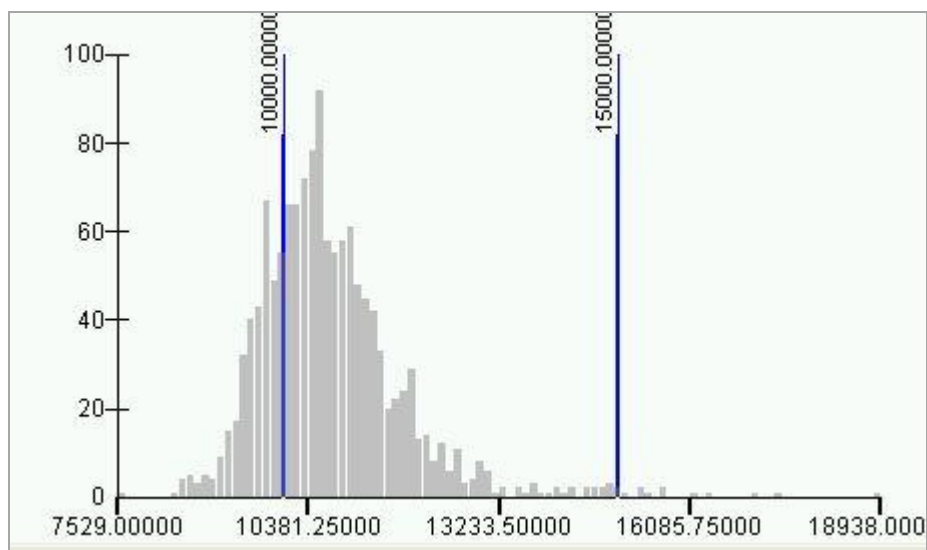
A total of 1,342 gamma radiation measurements were collected from the mine site, ranging from 7,529 cpm to 19,938 cpm. The measurements are represented in Figures 1 and 2.

**Background Readings:** 9,513 cpm; 9,768 cpm

**Background Average:** 9,641 cpm (mine claim background average was 12,328 cpm)

**Distribution Chart and Statistics:**

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	1342
Minimum:	7529.00000
Maximum:	18938.00000
Sum:	14376842.00000
Mean:	10712.99702
Median:	10546.50000
Standard Deviation:	1111.76543

### **Part III      Status of Reclamation and Mine Waste**

**Mine ID:** 158

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site:** Reclaimed : Yes

**Waste Pile onsite :** No

**NAMLRP Project Number:** NA-0195

**NAMLRP Mine features:** 1 Rim Strip / Pit

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**The following information was obtained from field observations collected during the 2010 site screening:**

**Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits**

None

**Waste Piles**

None

**Pits**

None

**Shafts**

None

**Other Debris and Mine Features**

2 large reclamation caps, possibly connected, positioned in central valley area

**Mine ID:** 1041

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site:** Reclaimed : Yes

**Waste Pile onsite :** No

**NAMLRP Project Number:** NA-0194

**NAMLRP Mine features:** 1 Rim Strip / Pit

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**The following information was obtained from field observations collected during the 2010 site screening:**

**Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits**

None

**Waste Piles**

None

**Pits**

None

**Shafts**

None

**Other Debris and Mine Features**

Series of reclamation berms over area identified on old topo maps as "tailings", berms cover the corner area between sites 159, 549, 550, and 1041, breached in the southwest

## Part IV

### Site observations and Environs

**Observed Structures: list number of and describe human habitation status of structures at the following distances from mine:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

**Observed Public or commercial structure: list and describe all schools, clinics, Chapter Houses, places of business and any other structure used by members of the community at the following distances:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

**Levels measured around the perimeter(s) of the identified structure(s):**

None

**Observed water sources: list the number and type of wells and surface water sources that are potentially used for human consumption at the following distances from the mine:**

**0 to 0.25 miles:** None

**0.25 miles to 4 miles:** Little Colorado River Basin approximately 1 mi W of the site

**Sensitive environments: note and describe all sensitive environments located within visible range of the mine site, including: wetlands, endangered species, habitats and approximate locations of sites that may be under protection of the government of the Navajo Nation.**

None

**Known Site History: include information from interviews with Chapter officials and residents. Note information on mine ownership, type of mining operation, period of operation, known amount of production, and any other information as provided.**

Julius Chee No. 2 mine claim consists of 2 separate mine sites, (#'s 158, 1041) with a total combined area of 83,680.97 m<sup>2</sup>. The mine claim was identified as being operational from 1956 to 1958. Historical documents showed the operator of the mine as B.C. Associates in 1956, and the Utco Uranium Corporation from 1957 to 1958. While operational, the mine had a total production volume of 637 tons. No other historical information or any additional ownership / lease information was identified in the EPA/AUM database.

## **Part V            Response Action Summary**

### **Summary of Evaluation Factors:**

#### ***Accessibility:***

**Was the mine easily accessible to potential human activity?**

Yes

#### ***Radiological Measurements:***

**Were any gamma radiation measurements collected at the mine greater than two times the site-specific background levels?**

Yes

#### ***Waste Piles:***

**Were any unreclaimed waste piles observed at the mine with gamma radiation measurements greater than two times the site-specific background levels?**

No

#### ***Structures:***

**Were any structures observed within 200 feet of the mine?**

No

#### ***Potential Drinking Water Sources:***

**Were any potential drinking water sources observed within 4 miles of the mine?**

Yes

#### ***Reclamation:***

**Was the mine reported to be previously reclaimed, or did the mine appear to be reclaimed?**

Yes (reclamation caps and berms)

## Part VI      Photos



Photo 1. Julius Chee No. 2, Site #158, reclamation area



Photo 2. Julius Chee No. 2, Site #1041



Photo 3. Julius Chee No. 2, Site #1041, reclamation berm area

**Part VII      Contacts Reports and Information**Name: Stanley Edison (928) 871-6861Eugene Esplain (928) 871-7331Title or official role (if any) Navajo EPA Superfund ProgramAddress PO Box 2946, Window Rock, AZ 86515Information provided Lead Regulatory Agency

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Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Address\_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

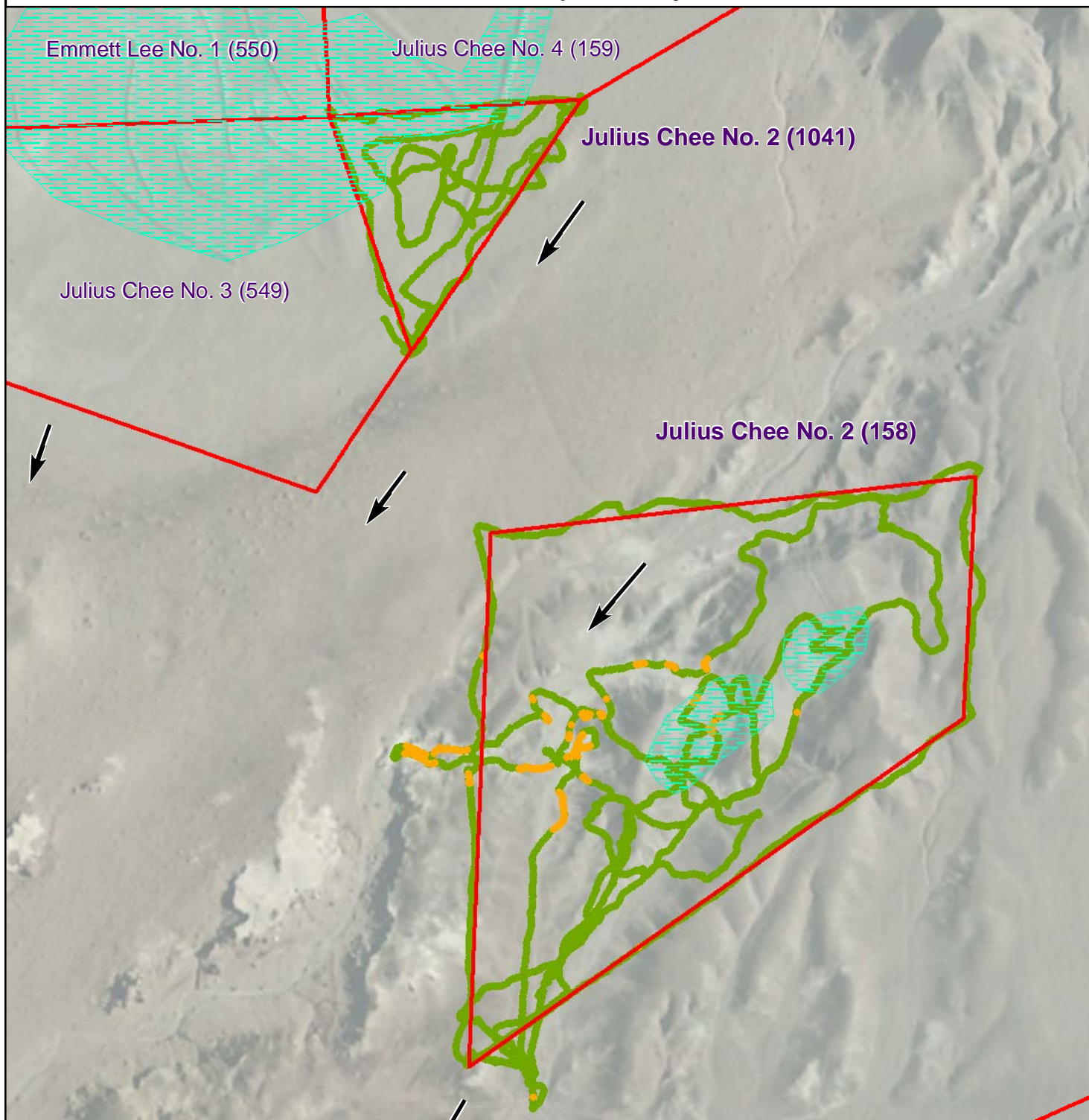
Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

**Figure 1 - Gamma Radiation Measurements, Above Two Times Background  
Julius Chee No. 2 (158, 1041)  
Coalmine Mesa Chapter, Navajo Nation**



### Legend

#### Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Gamma survey conducted 11/2010  
Measured as counts per minute (cpm)

Average background 12,328 cpm

- General Slope Direction
- ▨ Observed Reclamation Area
- ▭ Mine Site Boundary

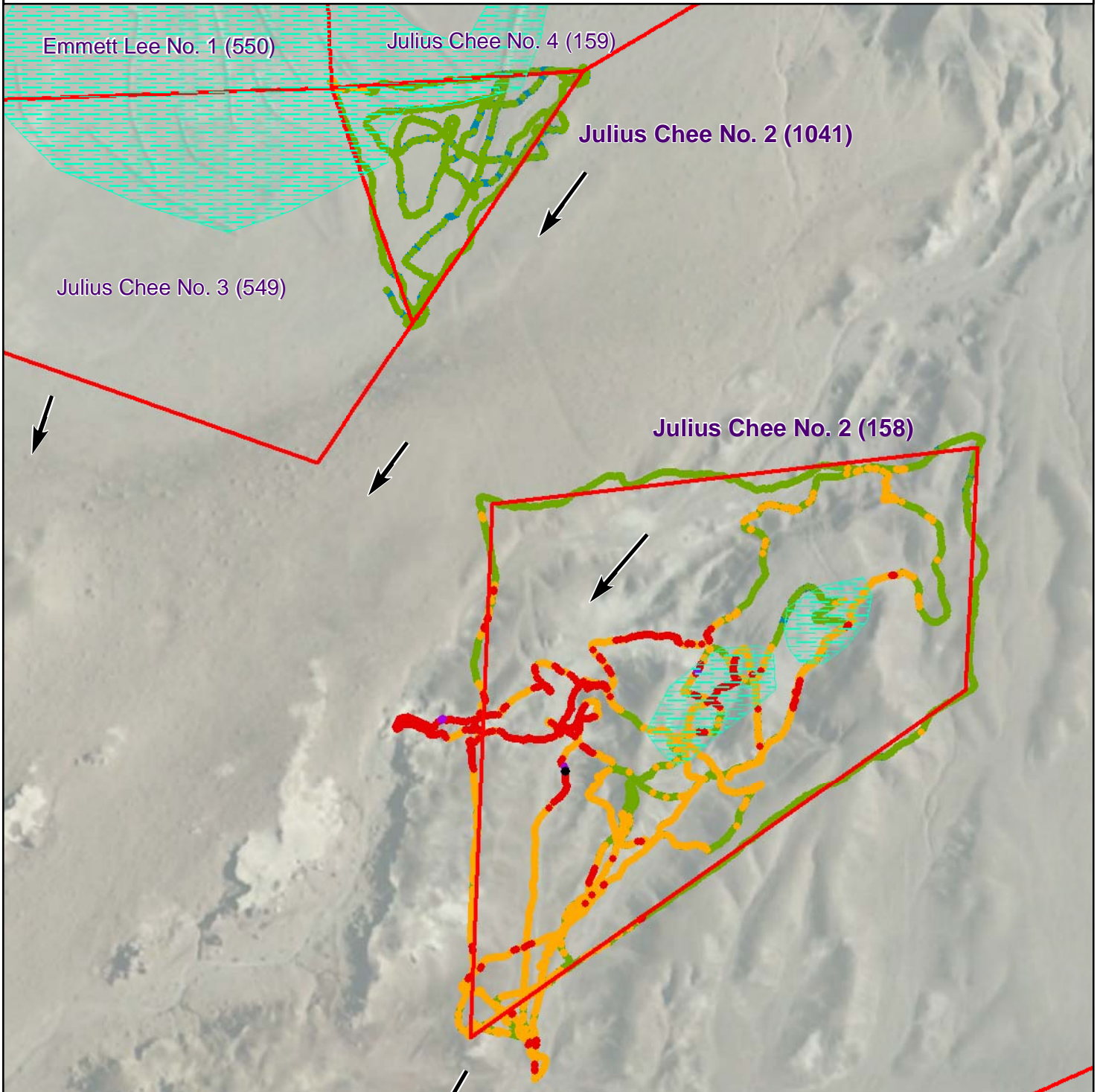


0 400 Feet



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**Figure 2 - Gamma Radiation Measurements**  
**Julius Chee No. 2 (158, 1041)**  
**Coalmine Mesa Chapter, Navajo Nation**



**Legend**

**Gamma Radiation Measurements**

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

- General Slope Direction
- ▨ Observed Reclamation Area
- ▭ Mine Site Boundary

**Gamma survey conducted 11/2010**  
**Measured as counts per minute (cpm)**

**Average background 12,328 cpm**

